RF Exposure Report

Report No.:	SA190916C08
FCC ID:	K7SF7U101
Test Model:	F7U101
Received Date:	Sep. 16, 2019
Test Date:	Oct. 15~ Oct. 17, 2019
Issued Date:	Oct. 17, 2019
Applicant:	Belkin International, Inc.
Address:	12045 East Waterfront Drive, Playa Vista, CA 90094
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Lin Kou Laboratories
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
Test Location:	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN
FCC Registration / Designation Number:	788550 / TW0003

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Release Control Record

Issue No.	Description	Date Issued
SA190916C08	Original release	Oct. 17, 2019

1 Certificate of Conformity

Product:	Wireless Charging Pad 10W Signature Edition
Brand:	belkin
Test Model:	F7U101
Sample Status:	Engineering sample
Applicant:	Belkin International, Inc.
Test Date:	Oct. 15~ Oct. 17, 2019
Standards:	FCC Part 1 (Section 1.1307(b), 1.1310) FCC Part 2 (Section 2.1091)

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

Prepared by : Polly Chien , **Date:** Oct. 17, 2019

Polly Chien / Specialist

Approved by : Bruce Chen , **Date:** Oct. 17, 2019

Bruce Chen / Senior Project Engineer

2 General Information

2.1 General Description of EUT

Product	Wireless Charger Pad
Test Model	F7U101
Sample Status	Engineering sample
Rating	Refer to note
Modulation Type	FSK
Operating Frequency	127.8 kHz
Antenna Type	Coil antenna
Field Strength	87.4dBuV/m
Dimension of coil	15.205cm^2 (diameter = 44mm)
Accessory Device	Adapter
Data Cable Supplied	1.18m shielded USB to Type C cable without core
Maximum Power Output for Load charging coil	10W

Note:

1. The EUT uses following adapter.

Brand	belkin
Model	DSA-18QFB FUS A
Input Power	100-240Vac, 50/60Hz, 0.8A
Output Power	+3.6-6Vdc, 2A +6-9Vdc, 2A +9-12Vdc, 1.5A

2. The sample no.: 006-001 is was the worst case for final testing.
3. The EUT has WPC (Wireless Power Consortium) technology.

3 RF Exposure

3.1 Description of Support Units

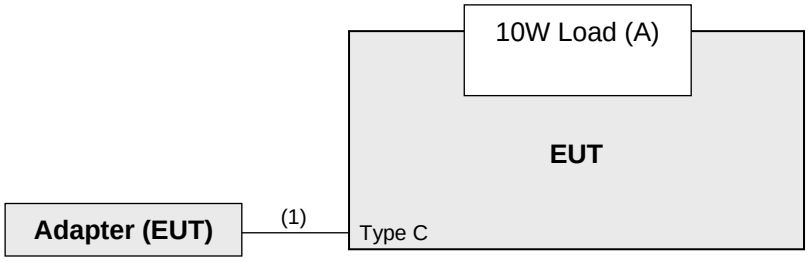
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	10W Load	NA	NA	NA	NA	Provided by client

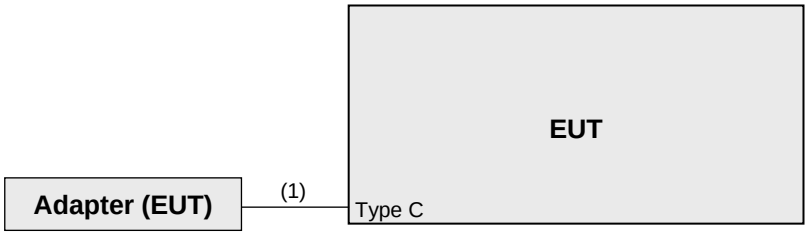
ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	USB to Type C cable	1	1.18	Y	0	Accessory of EUT

3.1.1 Configuration of System under Test

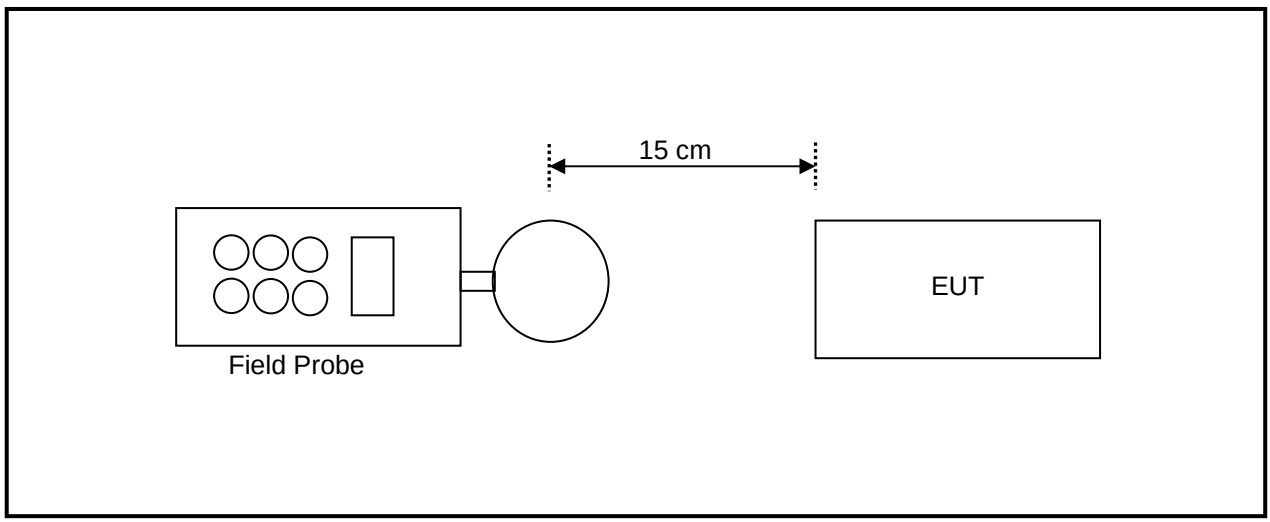
Charging Mode:



Standby Mode:



3.2 Test Setup



Note: Measurements were made from all sides and the top of the primary/client pair, with the 15cm measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.

3.3 Test Instruments

Description	Brand	Model No.	Frequency Range	Calibrated Date	Calibrated Until
Broadband Field Meter	NARDA	NBM-550	-	Mar. 28, 2018	Mar. 27, 2020
Magnetic Field Meter	NARDA	ELT-400	1 – 400kHz	Apr. 12, 2018	Apr. 11, 2020
Magnetic Probe	NARDA	HF 3061	300kHz – 30MHz	Apr. 16, 2018	Apr. 15, 2020
Magnetic Probe	NARDA	HF-0191	27 – 1000MHz	Apr. 17, 2018	Apr. 16, 2020
Broadband Field Meter	NARDA	NBM-550	-	Mar. 28, 2018	Mar. 27, 2020
Magnetic Field Probe	NARDA	2300/90.10	1Hz – 400kHz	Apr. 12, 2018	Apr. 11, 2020
E-Field Probe	NARDA	EF 0391	100kHz – 3GHz	Apr. 16, 2018	Apr. 15, 2020
E-Field Probe	NARDA	EF6091	100MHz – 60GHz	Apr. 17, 2018	Apr. 16, 2020

Note: 1. The calibration interval of the above test instruments is 12/24 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa RF Chamber

3.4 Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	RMS electric field strength (E)[a] (V/m)	RMS magnetic field strength (H)[a] (A/m)	RMS power density (S) E-field, H-field (W/m^2)	Averaging time $|E|^2$, $|H|^2$ or S (min)
0.1–1.0	1842	$16.3/f_M$	$(9000, 100\,000/f_M^2)$[b]	6
1.0–30	$1842/f_M$	$16.3/f_M$	$(9000/f_M^2, 100\,000/f_M^2)$	6
30–100	61.4	$16.3/f_M$	$(10, 100\,000/f_M^2)$	6
100–300	61.4	0.163	10	6
300–3000	–	–	$f_M/30$	6
3000–30 000	–	–	100	$19.63/f_G^{1.079}$
30 000–300 000	–	–	100	$2.524/f_G^{0.476}$

NOTE—f_M is the frequency in MHz, f_G is the frequency in GHz.

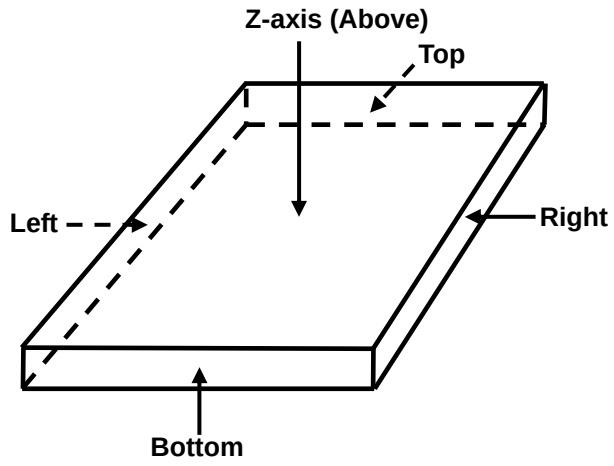
[a]For exposures that are uniform over the dimensions of the body, such as certain far-field plane-wave exposures, the exposure field strengths and power densities are compared with the MPEs in the Table. For non-uniform exposures, the mean values of the exposure fields, as obtained by spatially averaging the squares of the field strengths or averaging the power densities over an area equivalent to the vertical cross section of the human body (projected area), or a smaller area depending on the frequency (see NOTES to Table 8 and Table 9 below), are compared with the MPEs in the Table.

[b]These plane-wave equivalent power density values are commonly used as a convenient comparison with MPEs at higher frequencies and are displayed on some instruments in use.

Reference KDB 680106 D01 RF Exposure Wireless Charging Apps v03

The aggregate H-fields strengths at 15 cm surrounding the device and 15/20cm above the top surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.

3.5 Test Point Description



4. Calculation Result of Maximum Conducted Power

At Center without 3mm airgap

Charging Mode, receiver load 10%

E-Field Measurement (15cm)						E-Field Measurement (15cm)	E-Field Measurement (20cm)
Frequency (kHz)	EUT Side	Left	Right	Top	Bottom	Z-axis (Above)	Z-axis (Above)
127.8	Max E-field (V/m)	0.7800	0.5100	1.0500	0.6200	1.1500	1.1300
127.8	Limit (V/m)	614	614	614	614	614	614
127.8	Margin (V/m)	-613.2200	-613.4900	-612.9500	-613.3800	-612.8500	-612.8700
127.8	50 % Limit (V/m)	307	307	307	307	307	307
127.8	50 % Margin (V/m)	-306.2200	-306.4900	-305.9500	-306.3800	-305.8500	-305.8700

H-Field Measurement (15cm)						H-Field Measurement (15cm)	H-Field Measurement (20cm)
Frequency (kHz)	EUT Side	Left	Right	Top	Bottom	Z-axis (Above)	Z-axis (Above)
127.8	Max H-field (uT)	0.1900	0.1890	0.2320	0.2210	0.3430	0.3410
127.8	Max H-field (A/m)	0.1520	0.1512	0.1856	0.1768	0.2744	0.2728
127.8	Limit (A/m)	1.63	1.63	1.63	1.63	1.63	1.63
127.8	Margin (A/m)	-1.4780	-1.4788	-1.4444	-1.4532	-1.3556	-1.3572
127.8	50 % Limit (A/m)	0.815	0.815	0.815	0.815	0.815	0.815
127.8	50 % Margin (A/m)	-0.6630	-0.6638	-0.6294	-0.6382	-0.5406	-0.5422

Measurements were made from all sides and the top of the primary/client pair, with the 15/20cm measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.

Charging Mode, receiver load 50%

E-Field Measurement (15cm)						E-Field Measurement (15cm)	E-Field Measurement (20cm)
Frequency (kHz)	EUT Side	Left	Right	Top	Bottom	Z-axis (Above)	Z-axis (Above)
127.8	Max E-field (V/m)	0.7100	0.5900	0.9600	0.6600	1.0900	1.0500
127.8	Limit (V/m)	614	614	614	614	614	614
127.8	Margin (V/m)	-613.2900	-613.4100	-613.0400	-613.3400	-612.9100	-612.9500
127.8	50 % Limit (V/m)	307	307	307	307	307	307
127.8	50 % Margin (V/m)	-306.2900	-306.4100	-306.0400	-306.3400	-305.9100	-305.9500

H-Field Measurement (15cm)						H-Field Measurement (15cm)	H-Field Measurement (20cm)
Frequency (kHz)	EUT Side	Left	Right	Top	Bottom	Z-axis (Above)	Z-axis (Above)
127.8	Max H-field (uT)	0.1960	0.1860	0.2280	0.2250	0.3300	0.3280
127.8	Max H-field (A/m)	0.1568	0.1488	0.1824	0.1800	0.2640	0.2624
127.8	Limit (A/m)	1.63	1.63	1.63	1.63	1.63	1.63
127.8	Margin (A/m)	-1.4732	-1.4812	-1.4476	-1.4500	-1.3660	-1.3676
127.8	50 % Limit (A/m)	0.815	0.815	0.815	0.815	0.815	0.815
127.8	50 % Margin (A/m)	-0.6582	-0.6662	-0.6326	-0.6350	-0.5510	-0.5526

Measurements were made from all sides and the top of the primary/client pair, with the 15/20cm measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.

Charging Mode, receiver load Max.

E-Field Measurement (15cm)						E-Field Measurement (15cm)	E-Field Measurement (20cm)
Frequency (kHz)	EUT Side	Left	Right	Top	Bottom	Z-axis (Above)	Z-axis (Above)
127.8	Max E-field (V/m)	0.8600	0.6500	0.9300	0.7300	0.9600	0.9400
127.8	Limit (V/m)	614	614	614	614	614	614
127.8	Margin (V/m)	-613.1400	-613.3500	-613.0700	-613.2700	-613.0400	-613.0600
127.8	50 % Limit (V/m)	307	307	307	307	307	307
127.8	50 % Margin (V/m)	-306.1400	-306.3500	-306.0700	-306.2700	-306.0400	-306.0600

H-Field Measurement (15cm)						H-Field Measurement (15cm)	H-Field Measurement (20cm)
Frequency (kHz)	EUT Side	Left	Right	Top	Bottom	Z-axis (Above)	Z-axis (Above)
127.8	Max H-field (uT)	0.1850	0.1750	0.2120	0.2160	0.3230	0.3210
127.8	Max H-field (A/m)	0.1480	0.1400	0.1696	0.1728	0.2584	0.2568
127.8	Limit (A/m)	1.63	1.63	1.63	1.63	1.63	1.63
127.8	Margin (A/m)	-1.4820	-1.4900	-1.4604	-1.4572	-1.3716	-1.3732
127.8	50 % Limit (A/m)	0.815	0.815	0.815	0.815	0.815	0.815
127.8	50 % Margin (A/m)	-0.6670	-0.6750	-0.6454	-0.6422	-0.5566	-0.5582

Measurements were made from all sides and the top of the primary/client pair, with the 15/20cm measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.

At Center with 3mm airgap

Charging Mode, receiver load 10%

E-Field Measurement (15cm)						E-Field Measurement (15cm)	E-Field Measurement (20cm)
Frequency (kHz)	EUT Side	Left	Right	Top	Bottom	Z-axis (Above)	Z-axis (Above)
127.8	Max E-field (V/m)	0.7600	0.5200	1.0100	0.6500	1.1100	1.0600
127.8	Limit (V/m)	614	614	614	614	614	614
127.8	Margin (V/m)	-613.2400	-613.4800	-612.9900	-613.3500	-612.8900	-612.9400
127.8	50 % Limit (V/m)	307	307	307	307	307	307
127.8	50 % Margin (V/m)	-306.2400	-306.4800	-305.9900	-306.3500	-305.8900	-305.9400

H-Field Measurement (15cm)						H-Field Measurement (15cm)	H-Field Measurement (20cm)
Frequency (kHz)	EUT Side	Left	Right	Top	Bottom	Z-axis (Above)	Z-axis (Above)
127.8	Max H-field (uT)	0.1920	0.1850	0.2290	0.2190	0.3400	0.3380
127.8	Max H-field (A/m)	0.1536	0.1480	0.1832	0.1752	0.2720	0.2704
127.8	Limit (A/m)	1.63	1.63	1.63	1.63	1.63	1.63
127.8	Margin (A/m)	-1.4764	-1.4820	-1.4468	-1.4548	-1.3580	-1.3596
127.8	50 % Limit (A/m)	0.815	0.815	0.815	0.815	0.815	0.815
127.8	50 % Margin (A/m)	-0.6614	-0.6670	-0.6318	-0.6398	-0.5430	-0.5446

Measurements were made from all sides and the top of the primary/client pair, with the 15/20cm measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.

Charging Mode, receiver load 50%

E-Field Measurement (15cm)						E-Field Measurement (15cm)	E-Field Measurement (20cm)
Frequency (kHz)	EUT Side	Left	Right	Top	Bottom	Z-axis (Above)	Z-axis (Above)
127.8	Max E-field (V/m)	0.6800	0.6100	0.9400	0.6300	1.0500	1.0200
127.8	Limit (V/m)	614	614	614	614	614	614
127.8	Margin (V/m)	-613.3200	-613.3900	-613.0600	-613.3700	-612.9500	-612.9800
127.8	50 % Limit (V/m)	307	307	307	307	307	307
127.8	50 % Margin (V/m)	-306.3200	-306.3900	-306.0600	-306.3700	-305.9500	-305.9800

H-Field Measurement (15cm)						H-Field Measurement (15cm)	H-Field Measurement (20cm)
Frequency (kHz)	EUT Side	Left	Right	Top	Bottom	Z-axis (Above)	Z-axis (Above)
127.8	Max H-field (uT)	0.1900	0.1830	0.2220	0.2210	0.3330	0.3300
127.8	Max H-field (A/m)	0.1520	0.1464	0.1776	0.1768	0.2664	0.2640
127.8	Limit (A/m)	1.63	1.63	1.63	1.63	1.63	1.63
127.8	Margin (A/m)	-1.4780	-1.4836	-1.4524	-1.4532	-1.3636	-1.3660
127.8	50 % Limit (A/m)	0.815	0.815	0.815	0.815	0.815	0.815
127.8	50 % Margin (A/m)	-0.6630	-0.6686	-0.6374	-0.6382	-0.5486	-0.5510

Measurements were made from all sides and the top of the primary/client pair, with the 15/20cm measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.

Charging Mode, receiver load Max.

E-Field Measurement (15cm)						E-Field Measurement (15cm)	E-Field Measurement (20cm)
Frequency (kHz)	EUT Side	Left	Right	Top	Bottom	Z-axis (Above)	Z-axis (Above)
127.8	Max E-field (V/m)	0.8200	0.6400	0.9200	0.7500	0.9200	0.9100
127.8	Limit (V/m)	614	614	614	614	614	614
127.8	Margin (V/m)	-613.1800	-613.3600	-613.0800	-613.2500	-613.0800	-613.0900
127.8	50 % Limit (V/m)	307	307	307	307	307	307
127.8	50 % Margin (V/m)	-306.1800	-306.3600	-306.0800	-306.2500	-306.0800	-306.0900

H-Field Measurement (15cm)						H-Field Measurement (15cm)	H-Field Measurement (20cm)
Frequency (kHz)	EUT Side	Left	Right	Top	Bottom	Z-axis (Above)	Z-axis (Above)
127.8	Max H-field (uT)	0.1810	0.1740	0.2150	0.2110	0.3190	0.3080
127.8	Max H-field (A/m)	0.1448	0.1392	0.1720	0.1688	0.2552	0.2464
127.8	Limit (A/m)	1.63	1.63	1.63	1.63	1.63	1.63
127.8	Margin (A/m)	-1.4852	-1.4908	-1.4580	-1.4612	-1.3748	-1.3836
127.8	50 % Limit (A/m)	0.815	0.815	0.815	0.815	0.815	0.815
127.8	50 % Margin (A/m)	-0.6702	-0.6758	-0.6430	-0.6462	-0.5598	-0.5686

Measurements were made from all sides and the top of the primary/client pair, with the 15/20cm measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.

Standby Mode

E-Field Measurement (15cm)						E-Field Measurement (15cm)	E-Field Measurement (20cm)
Frequency (kHz)	EUT Side	Left	Right	Top	Bottom	Z-axis (Above)	Z-axis (Above)
127.8	Max E-field (V/m)	0.6400	0.4900	0.7800	0.5700	0.4100	0.3900
127.8	Limit (V/m)	614	614	614	614	614	614
127.8	Margin (V/m)	-613.3600	-613.5100	-613.2200	-613.4300	-613.5900	-613.6100
127.8	50 % Limit (V/m)	307	307	307	307	307	307
127.8	50 % Margin (V/m)	-306.3600	-306.5100	-306.2200	-306.4300	-306.5900	-306.6100

H-Field Measurement (15cm)						H-Field Measurement (15cm)	H-Field Measurement (20cm)
Frequency (kHz)	EUT Side	Left	Right	Top	Bottom	Z-axis (Above)	Z-axis (Above)
127.8	Max H-field (uT)	0.1400	0.1380	0.1450	0.0550	0.2340	0.2310
127.8	Max H-field (A/m)	0.1120	0.1104	0.1160	0.0440	0.1872	0.1848
127.8	Limit (A/m)	1.63	1.63	1.63	1.63	1.63	1.63
127.8	Margin (A/m)	-1.5180	-1.5196	-1.5140	-1.5860	-1.4428	-1.4452
127.8	50 % Limit (A/m)	0.815	0.815	0.815	0.815	0.815	0.815
127.8	50 % Margin (A/m)	-0.7030	-0.7046	-0.6990	-0.7710	-0.6278	-0.6302

Measurements were made from all sides and the top of the primary/client pair, with the 15/20cm measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.

5. Photographs of the Test Configuration

Please refer to the attached file (Test Setup Photo).

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